m.s. [illegible handwriting]

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June 24, 1986

Mr. R. L. Stamets, Director
Oil Conservation Division
New Mexico Department of
Energy and Minerals
Post Office Box 2088
Santa Fe, New Mexico 87504-2088

Case 8947

Re: Application of Yates Petroleum Corporation for Hardship Gas Well Classification, Eddy County, New Mexico.

Dear Mr. Stamets:

Enclosed is the application of Yates Petroleum Corporation for a hardship gas well classification for the Box Canyon Unit #2 Well located in Unit F of Section 13, Township 21 South, Range 21 East, N.M.P.M., Eddy County, New Mexico. Copies of this application have been mailed to the New Mexico Oil Conservation Division's Artesia office and to the purchaser and all offset operators. Yates Petroleum Corporation requests that this matter be set for hearing before a Division Examiner on July 23, 1986.

Your attention to this matter is appreciated.

Very truly yours,

William F. Carr

William F. Carr

WFC/cv
enclosures

cc: David F. Boneau
Engineering Mgr.
Yates Petroleum Corp.
105 South Fourth St.
Artesia, New Mexico 88210

RECEIVED
JUN 25 1986
OIL CONSERVATION DIVISION

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
P. O. Box 2088
Santa Fe, New Mexico 87501

Adopted 3-2-84
Side 1

Case 8947

APPLICATION FOR CLASSIFICATION AS HARDSHIP GAS WELL

Operator Yates Petroleum Corporation Contact Party David F. Boneau

Address 105 South 4th Street Artesia 88210 Phone No. 505-748-1471

Lease Box Canyon Unit Well No. 2 UT F Sec. 13 TWP 21S RGE 21E

Pool Name Little Box Canyon Morrow Minimum Rate Requested 200 Mcf/D

Transporter Name El Paso Natural Gas Purchaser (if different) _____

Are you seeking emergency "hardship" classification for this well? _____ yes X no

Applicant must provide the following information to support his contention that the subject well qualifies as a hardship gas well.

1) Provide a statement of the problem that leads the applicant to believe that "underground waste" will occur if the subject well is shut-in or is curtailed below its ability to produce. (The definition of underground waste is shown on the reverse side of this form)

2) Document that you as applicant have done all you reasonably and economically can do to eliminate or prevent the problem(s) leading to this application.

   a) Well history. Explain fully all attempts made to rectify the problem. If no attempts have been made, explain reasons for failure to do so.

   b) Mechanical condition of the well(provide wellbore sketch). Explain fully mechanical attempts to rectify the problem, including but not limited to:

      i) the use of "smallbore" tubing; ii) other de-watering devices, such as plunger lift, rod pumping units, etc.

3) Present historical data which demonstrates conditions that can lead to waste. Such data should include:

   a) Permanent loss of productivity after shut-in periods (i.e., formation damage).

   b) Frequency of swabbing required after the well is shut-in or curtailed.

   c) Length of time swabbing is required to return well to production after being shut-in.

   d) Actual cost figures showing inability to continue operations without special relief

4) If failure to obtain a hardship gas well classification would result in premature abandonment, calculate the quantity of gas reserves which would be lost

5) Show the minimum sustainable producing rate of the subject well. This rate can be determined by:

   a) Minimum flow or "log off" test; and/or

   b) Documentation of well production history (producing rates and pressures, as well as gas/water ratio, both before and after shut-in periods due to the well dying, and other appropriate production data).

6) Attach a plat and/or map showing the proration unit dedicated to the well and the ownership of all offsetting acreage.

7) Submit any other appropriate data which will support the need for a hardship classification.

8) If the well is in a prorated pool, please show its current under- or over-produced status.

9) Attach a signed statement certifying that all information submitted with this application is true and correct to the best of your knowledge; that one copy of the application has been submitted to the appropriate Division district office (give the name) and that notice of the application has been given to the transporter/purchaser and all offset operators.

GENERAL INFORMATION APPLICABLE TO HARDSHIP GAS WELL CLASSIFICATION

1) Definition of Underground Waste.

> "Underground Waste as those words are generally understood in the oil and gas business, and in any event to embrace the inefficient, excessive, or improper use or dissipation of the reservoir energy, including gas energy and water drive, of any pool, and the locating, spacing, drilling, equipping, operating, or producing, of any well or wells in a manner to reduce or tend to reduce the total quantity of crude petroleum oil or natural gas ultimately recovered from any pool, and the use of inefficient underground storage of natural gas."

2) The only acceptable basis for obtaining a "hardship" classification is prevention of waste with the burden of proof solely on the applicant. The applicant must not only prove waste will occur without the "hardship" classification, but also that he has acted in a responsible and prudent manner to minimize or eliminate the problem prior to requesting this special consideration. If the subject well is classified as a "hardship" well, it will be permitted to produce at a specified minimum sustainable rate without being subject to shut-in by the purchaser due to low demand. The Division can rescind approval at any time without notice and require the operator to show cause why the classification should not be permanently rescinded if abuse of this special classification becomes apparent.

3) The minimum rate will be the minimum sustainable rate at which the well will flow. If data from historical production is insufficient to support this rate (in the opinion of the Director), or if an offset operator or purchaser objects to the requested rate, a minimum flow ("log off") test may be required. The operator may, if he desires, conduct the minimum flow test, and submit this information with his application.

4) If a minimum flow test is to be run, either at the operator's option or at the request of the Division, the offset operators, any protesting party, the purchaser and OCD will be notified of the date of the test and given the opportunity to witness, if they so desire.

5) Any interested party may review the data submitted at either the Santa Fe office or the appropriate OCD District Office.

6) The Director can approve uncontested applications administratively if, in his opinion, sufficient justification is furnished. Notice shall be given of intent to approve by attaching such notice to the regular examiner's hearing docket. Within 20 days following the date of such hearing, the affected parties will be permitted to file an objection. If no objection has been filed, the application may be approved.

7) Should a protest be filed in writing, the applicant will be permitted to either withdraw the application, or request it to be set for hearing.

8) An emergency approval, on a temporary basis for a period not to exceed 90 days, may be granted by the District Supervisor, pending filing of formal application and final action of the OCD Director. This temporary approval may be granted only if the District Supervisor is convinced waste will occur without immediate relief. If granted, the District Supervisor will notify the purchaser.

9) After a well receives a "hardship" classification, it will be retained for a period of one year unless rescinded sooner by the Division. The applicant will be required to certify annually that conditions have not changed substantially in order to continue to retain this classification.

10) Nothing here withstanding, the Division may, on its own motion, require any and all operators to show cause why approval(s) should not be rescinded if abuse is suspected or market conditions substantially change in the State of New Mexico.

11) A well classified as a "hardship well" will continue to accumulate over and under production (prorated pools). Should allowables exceed the hardship allowable assigned, the well will be permitted to produce at the higher rate, if capable of doing so, and would be treated as any other non-hardship well. Any cumulative overproduction accrued either before or after being classified "hardship" must, however, be balanced before the well can be allowed to produce at the higher rate.

Hardship Gas Well Classification

Box Canyon Unit #2
F 13-21S-21E
Little Box Canyon Morrow

Yates Petroleum is not seeking emergency hardship classification for this well because El Paso Natural Gas has told Yates that El Paso will take gas from the Box Canyon Unit #2 while this hardship application is processed. Yates feels there is any emergency in the sense that recent behavior of the well makes it doubtful the well can be restarted many more times.

1. Provide a statement of the problem that leads the applicant to believe that "undergrowing waste" will occur if the subject well is shut-in or is curtailed below its ability to produce.

   The Morrow reservoir at Box Canyon is a water drive reservoir. The Box Canyon Unit #2 has produced water since 1980. Yates installed a compressor in July of 1980 to keep the gas flowing in the presence of water. From 1980 to the end of 1985, the well has produced about 100 to 125 BWPD but peak gas production has declined from 1500 Mcf/D to about 400 to 500 Mcf/D. Sales during 1985 were about 110 MMcf and current reserves are estimated as 250 MMcf of gas. In 1986, the pipeline asked that the well be produced only one day a month. In March, Yates had to blow the well to the atmosphere for 2 days in order to produce for one day into the pipeline. In June, Yates had to blow the well to the atmosphere for 14 days to get the compressor started. Gas blown to the atmosphere is wasted. The total reserves will be wasted if the well cannot be unloaded. The problem is now to a critical stage. The waste can be prevented by letting the well produce continuously at 200 Mcf/D and 100 BWPD.

2. Document that you as applicant have done all you reasonably and economically can do to eliminate or prevent the problems leading to this application.

   a. Well History

      The Box Canyon Unit #2 was spudded on January 13, 1977, at a location 2080' FNL and 1980' FWL of Section 13-21S-21E in Eddy County. The well was drilled to TD of 8595' and completed on February 18, 1977 for 9970 Mcf/D from Morrow perforations at 8110-8126 and 8229-8238. Cumulative production is 2.2 Bcf of gas. Production during 1985 was 109182 Mcf and 18991 BW and 151 BC.

      The well began to produce large quantities of water in 1980 after cumulative production of 1.3 Bcf. Due to high line pressures and quantity of water the well was producing, Yates Petroleum bought and installed a compressor on said well on July 21, 1980. At this time the well was capable of producing 1.5 MMcf of gas and 120 BWPD. From 7-21-80 until February of 1986 production has gradually fallen off to .4 MMcf and 125 BW due to loss of bottom hole pressure and water invasion; however, up until this point, our compressor has been able to handle the problem.

Due to market demands we have been cutback to one day production per month since February 1986 by El Paso, and our compressor will no longer take care of the well loading up and dying.

In March of 1986, we dropped several soap sticks in tubing and blew well to the atmosphere for two days to get one day's production of 233 Mcf. In April of 1986, we again dropped several soap sticks and blew well for several days to get one day's production of 276 Mcf. In May of 1986, the same procedure was followed with it taking a longer period of time to recover 146 Mcf.

In June of 1986, we dropped thirty soap sticks and blew the well fourteen days before we got enough pressure to start the compressor. During four days of keeping the well on, the tubing pressure has risen from 40# to 80#, the gas volume has risen from 100 Mcf to 180 Mcf and the water volume has risen from 40B to 96B per day. We feel that with a minimum sustained flow of 200 Mcf/D we can keep the well unloaded and retain that production.

b. Mechanical Condition of the Well

The well has 2-7/8" tubing set in a packer at 8053'. The casing design includes 8-5/8" set at 1547 feet and 5-1/2" set at 8456 feet. A type DPC AJAX 115 horsepower compressor was installed on the well on July 21, 1980. Page 4 shows a well sketch for Box Canyon Unit #2.

what about pulling packer and installing plunger or BH pump and run?

3. Present historical data which demonstrates conditions that can lead to waste.

Water has been steadily invading the Morrow gas reservoir in this well for six years. There does not appear to be permanent formation damage due to water. However, it has become very difficult to get the well back on line after its is shut-in. In March of 1986, Yates blew the well to the atmosphere for two days to get back on line. In April, Yates blew the well for four days in order to produce one day into the pipeline. It took six days to get the well on line in May and fourteen days in June.

Income per month has been one day's production of 200 Mcf at $2.50 per Mcf or about $500. Hauling away 100 BW costs $140. Almost 1000 Mcf worth $2500 is vented in order to unload the well. Minimum operating charges are about $600 per month for pumper and overhead. In its present situation, the well requires lots of special attention. Of course, almost no one can make money selling gas only one day a month. The hardship here is the large ratio of gas vented to gas sold and the evidence that very large amounts of gas now must be vented unless the well can be produced continuously.

4. If failure to obtain a hardship gas well classification would result in premature abandonment, calculate the quantity of gas reserves that would be lost.

   Calculated gas reserves on the Box Canyon Unit #2 are 250 MMcf. The well has produced about 900 MMcf along with water since 1980. Its decline curve through 1985 indicated that an additional 250 MMcf can be produced.

5. Show minimum sustainable producing rate of the subject well.

   The minimum sustainable producing rate is about 200 Mcf/D. The well has produced 100 to 125 BWPD since 1980 while the peak gas rate decreased from 1500 to 400 Mcf/D. So, the minimum sustainable rate is less than 400 Mcf/D. On April 25 and 26 of 1986, the well could not sustain production at rates of 85 and 91 Mcf/D. From June 13 to 16 of 1986, the well flowed at rates of 107 to 123 Mcf/D with water production of 80 to 90 BWPD. When water production returns to 100-125 BWPD, the flow rate must rise to 130 to 170 Mcf/D to lift the additonal water. A minimum sustainable rate of 200 Mcf/D would give a little room for further decline in well productivity.

6. Attach plat and/or map showing the proration unit dedicated to the well and the ownership of all offsetting acreage.

   Page 5 is such a map. Owners of offsetting acreage are shown on page 6.

7. Submit any other appropriate data which will support the need for a hardship classification.

   No additonal data.

8. If the well is in a prorated pool, please show its current under- or over-produced status.

   The Box Canyon Unit #2 is not in a prorated pool.

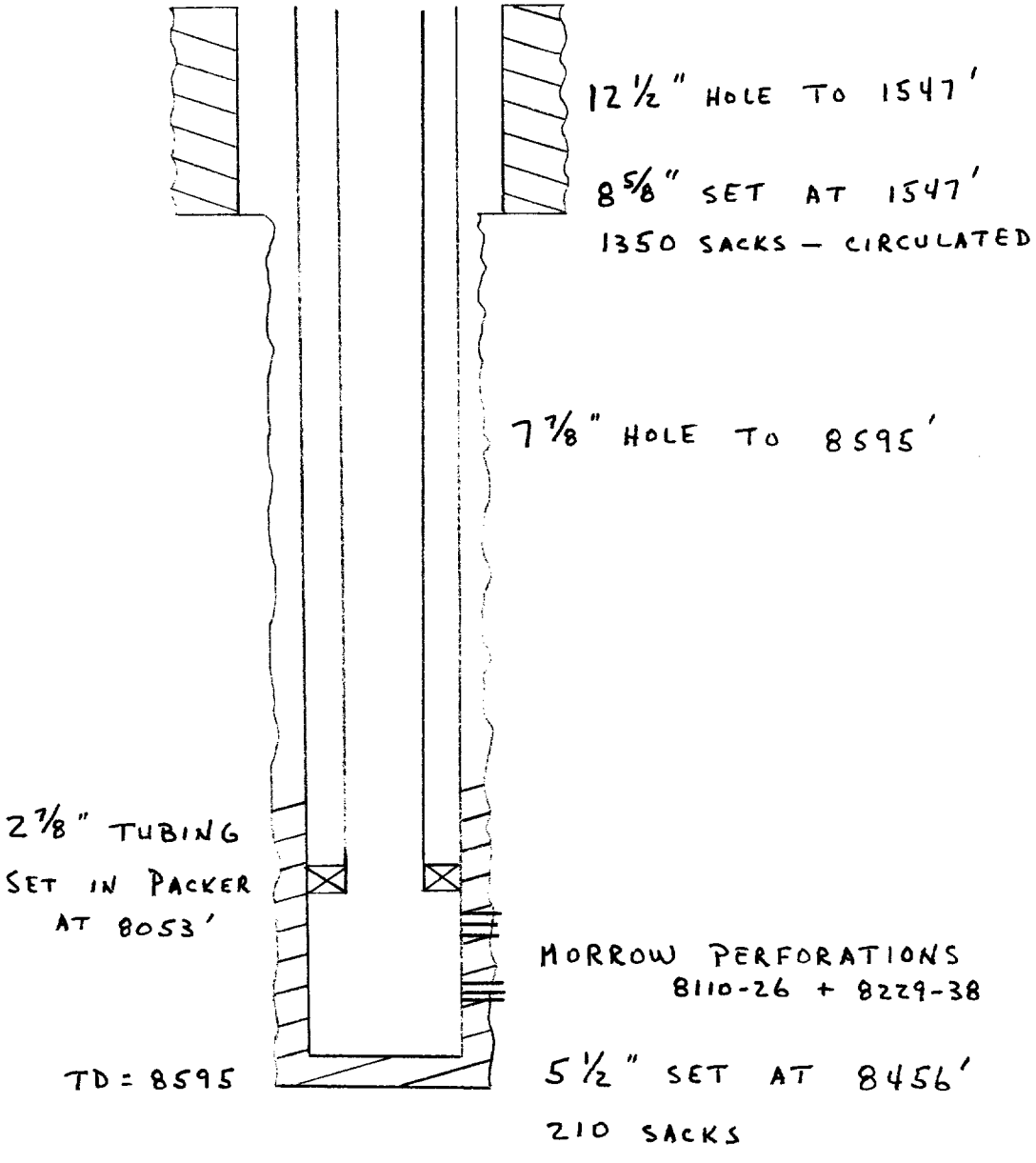
9. Attach a signed statement certifying that all information submitted with this application is true and correct to the best of your knowledge; that one copy of the application has been submitted to the approprate Division district office and that notice of the application has been given to the transporter/ purchaser and all offset operators.

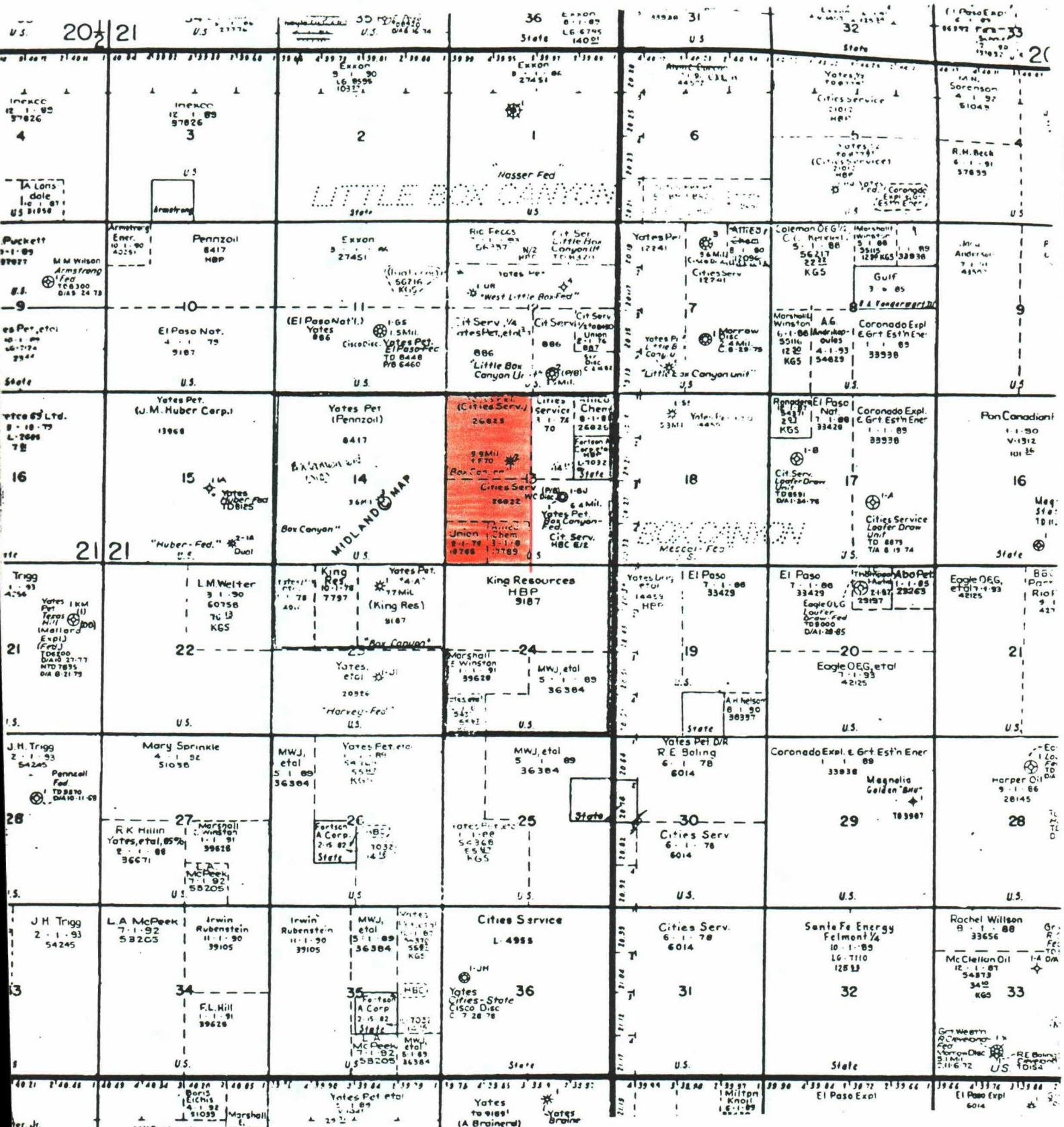
   Page 7 is the required statement.

I think this should be granted, provided documentation is provided at hearing as otherwise ...

Well Sketch

Yates Petroleum Corporation
Box Canyon Unit #2
F 13-21-21
Eddy County, New Mexico




LITTLE BOX CANYON
BOX CANYON
MIDLAND MAP
Yates Petroleum Corporation
Box Canyon Unit #2

Offset Operators

Lease: Box Canyon Unit #2 Well
Section 13-21S-21E
Eddy County, New Mexico

1. Cities Service Oil Company
   P. O. Box 3238
   Dallas, Texas 75285

2. Ben Fortson
   3000 Forth Worth National Bank Bldg.
   Fort Worth, Texas 76102

3. Pennzoil Company
   P. O. Box 2967
   Houston, Texas 77216

4. Twin Eagle Petroleum, Inc.
   P. O. Box 97440
   Dallas, Texas 75397

5. Union Texas Petroleum Corporation
   P. O. Box 200128
   Houston, Texas 77216

6. Vintage Petroleum, Inc.
   502 South Main, Suite 400
   Tulsa, Oklahoma 74103

Certification

I certify the following:

1. All information submitted with this application for hardship gas well classification on the Box Canyon Unit #2 is true and correct to the best of my knowledge.

2. One copy of the application has been submitted to the Artesia district office of the New Mexico Oil Conservation Division.

3. Notice of the application has been given to El Paso Natural Gas and to all offset operators.

Signed Dave Boneau

Title Engineering Manager

Date June 20, 1986